Building Learning Networks for Lifelong Learners: Challenges, Models, Technologies and Standards

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Abstract

In this tutorial five key problems are discussed that occur in the area of lifelong learning. For each problem we will look at the possible technological solutions. The five problems are: 1) How do we support formal and informal learning from a lifelong learning perspective? 2) How to get an overview of the possible formal and informal learning opportunities that fits a persons needs and competences?3) How do we access the competences of persons to keep track of what there capabilities are? 4) How can we support lifelong learners in performing their various tasks? 5) How can we support the active sharing of knowledge and learning resources?

1. Introduction

Last years' ICALT conference in Taiwan I had a keynote about our work on Educational Modelling and IMS Learning Design. In this tutorial I will focus on our current research that positions the Learning Design work into a larger context: the establishment of networks of distributed collaborating learners, teachers, workers and institutions to facilitate formal and informal learning during all phases of life.

The tutorial will be partly presentations and partly discussions. In between I will also demonstrate some tools that we are currently developing in this area.

2. Objectives

In the tutorial I will explore, together with the participants, some of the key issues for new technologies to support lifelong learning. The question will be asked whether (and how) it will be possible to solve any of the following problems:

2.1 How do we support formal and informal learning from a lifelong learning perspective?

In many education and training systems, and even in the heads of most humans, learning is still seen as something that is solely done in courses, schools, universities and training programs. You are 'learning' when you are at school or in a course, and most of us are learning – in this way – only in the first parts of our lives. This model is sufficient with a rather stable environment in which we work and life. However, in our modern society we are constantly challenged with the requirement to change, to use new technologies, to perform tasks faster and more efficient. Specifically in the knowledge societies it is expected that people learn permanently to cope with new tasks, new technologies and new situations on a daily bases. Not only in the professions, but also in other areas of your life (hobbies, cooking, learning how to use a new device, etc.). Some of this learning will be done by following courses, but in many situations people learn more informally: by asking others, by searching the Internet for answers, by exploring the new tasks yourselves.

Questions to be answered are:

1. What are the new requirements for learning technologies and standards given a lifelong learning perspective?
2. What new pedagogical and organizational models are required?
3. What type of technologies are needed to support the permanent need to acquire new competences.

The next questions are a further elaboration of the general requirements for lifelong learning.

2.2 How to get an overview of the possible formal and informal learning opportunities that fits a persons needs and competences?

For individuals, specifically adults, with a learning demand, it is hard to get a good overview of all the possible formal and informal learning possibilities that

are available, and to identify the most appropriate ones for their needs.
The ideal would be that when you have a learning need, that you can search for possible solutions and that the search result will advise me what the best solution is given:
a. My current levels of competence in the domain
b. My restrictions in terms of location, available time, tempo, physical constraints
c. My preferences

2.3 How do we access the competences of persons to keep track of what there capabilities are?

When adult persons are successful lifelong learners, they have learned many things without having a formal diploma or any other proof of the competences that they have acquired. Such an overview of competences is for instance needed when you apply for a new job: how can you convince the employer that you fulfill the job requirements? Diploma's are only providing a limited view. This overview is also needed for yourself to reflect on your current competence state and to make new plans for growth in competences. This question has many aspects that are currently studied in areas as competence assessment, performance assessment and ePortfolios.

Questions to be answered are:

1. How can we assess the competence state of a person?
2. How can be create interoperable competence frameworks?
3. How can we register and use this data in an interoperable way (interoperable ePortfolio's)
4. How can we use such an ePortfolio: evidence of competences, for reflection, etc.

2.4 How can we support lifelong learners in performing their various tasks?

The availability of support is crucial for effective task performance. Current e-learning environments provide too little effective support to the users in their various tasks. Not all users need support, but when learning or applying a new skill or complex knowledge, adequate support is often a key factor for success. There is, however, a lack of experts, trainers and teachers to meet all the needs of learners when lifelong competence development in Europe is scaled up. Furthermore, individual experts and teachers have a restricted bandwidth with which to support novices and learners. Consequently software support should be provided not only for learners and knowledge users, but also for the people who provide learning support services in order to increase their bandwidth.

Questions to be answered:

1. How can we setup an adequate support structure, using mechanisms as: peer support (how to find the peers?); use of software agents to provide for automated support; use of self-support mechanisms by providing the user feedback on their current state.
2. How can we support experts and tutors in performing their tasks more efficiently.

2.5 How can we support the active sharing of knowledge and learning resources?

Sharing of knowledge has many facets. But one of the problems of many current e-learning systems is that they make a strict distinction between the persons who are entitled to author or change learning resources (the teachers) and the ones who are 'consuming' these (the students). In a lifelong learning context everyone is to a certain extend learner and teacher at the same time, depending on the relative difference in knowledge and competences of the different heterogenous participants in the learning network.

Questions to be answered are:

1. How can we provide everyone with tools to easy develop and publish new learning resources. We will for instance look the requirements for the authoring tools in the IMS Learning Design area.
2. How can we support the sharing of these resources in the learning network?

3. Audience for the Tutorial

The audience for the tutorial consists of researchers, PhD students etc. who are developing new learning technologies. Also teachers, school managers, trainers and other interested persons are very welcome to participate in the discussions.